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| EXAMINER |
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HERRING, VIRGIL A

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| ART UNIT | PAPER NUMBER |
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2132

DATE MAILED: 07/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

87

Office Action Summary

Application No.

10/082,534

Applicant(s)

STIRBU, VLAD ALEXANDRU

Examiner

Virgil Herring

Art Unit

2132

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 February 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

This action is responsive to the communication filed on February 21, 2002. Claims 1-11, representing a method and apparatus for granting access by a portable phone to multimedia services, are pending. Claims 1-11 are rejected.

Claim Rejections - 35 USC § 101 & 112

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With regards to claim 1, in line 8 the claim recites the limitation "...a list of substantially all services...". This is indistinct, because there is no way to determine what percent of "all" can be considered "substantially all".

With regards to claim 6, in line 3 the claim recites the limitation "...applying a practically uni-directional mapping...". This is indistinct, because there is no way to determine what percent of "uni-directional" can be considered "practically uni-directional".

With regards to claim 7, in line 8 the claim recites the limitation "...indicating substantially all services...". This is indistinct, because there is no way to determine what percent of "all" can be considered "substantially all".

With regards to claim 9, in line 9 the claim recites the limitation "...applying a practically uni-directional mapping...". This is indistinct, because there is no way to determine what percent of "uni-directional" can be considered "practically uni-directional".

Claims 2-5, and 8 are rejected based on their dependencies.

Claim 10 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claim is directed to neither a process nor a machine, but rather, overlaps the two statutory classes.

Claim 10 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter from a single statutory class which the applicant regards as the invention. Making a system claim dependent on a method claim renders the claim language indefinite.

Claim 11 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claim is directed to neither a process nor a machine, but rather, overlaps the two statutory classes.

Claim 11 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter from a single statutory class which the applicant regards as the invention. Making a system claim dependent on a method claim renders the claim language indefinite.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-8 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over the 3rd Generation Partnership Project (3GPP) Technical Specification 33.203 (TS33.203) in view of the 3GPP TS22.228.

With regards to claim 1, the 3GPP TS 33.203 teaches a method for registering a UE with an IMS so as to allow the UE to access, over a digital communication system, an IM service to which the UE is subscribed, the method including a step in which an S-CSCF of the IMS sends an AV request message (CM1) to an HSS (See 3GPP TS33.203 §6.1.1). The 3GPP TS33.203 does not teach the method characterized in that it includes a step in which in response to the AV request message (CM1), the HSS provides (31) in a AV request response message (CM2) a field indicating a list of

substantially all services to which the UE is subscribed along with either information that allows establishing SAs for each such service or information that could be used as keying material or other input for other security mechanisms specific to each service.

The 3GPP TS22.228 teaches a method for IMS that allows a UE to register with IMS for multimedia applications in which one of the connection negotiation messages contains a list of services to which the UE is subscribed. In particular, the 3GPP TS22.228 teaches that "it shall be possible for the capability negotiation to take place at invocation, acceptance, and during an IP multimedia session." In other words, the list of subscribed IM services can be communicated from the IMS to the UE at any point, specifically including the connection phase (invocation of the session). (3GPP TS22.228 § 7.3)

It would have been obvious to one of ordinary skill in the art to modify the 3GPP TS33.203 using the 3GPP TS22.228 by incorporating the list of subscribed IM services in message CM2 as taught by the 3GPP TS22.228. One would have been motivated to do so because CM2 is the only connection from the HSS, where the list of subscribed services is stored, to the S-CSCF, which is actually in contact with the UE, in the IM-subscriber registration process. Thus, the CM2 message would be necessary for communicating a list of capabilities during the connection phase.

With regards to claim 2, the 3GPP TS33.203 modified by the 3GPP TS22.228 as described above teaches the method as in claim 1, further characterized in that in responding to the AV request response message (CM2), the S-CSCF of the IMS adds (32) the information included in the AV request response message (CM2) to an authorization challenge message (SM4) and forwards it to an I-CSCF of the IMS (See 3GPP TS33.203 §6.1.1).

With regards to claim 3, the 3GPP TS33.203 modified by the 3GPP TS22.228 as described above teaches the method as in claim 2, further characterized in that when the I-CSCF receives the authorization challenge message (SM4), it forwards (33) it as a forwarded authorization challenge message (SM5) to a P-CSCF of the IMS, which parses (34) the forwarded authorization challenge message (SM5), generates SPD entries and corresponding SAs for both P-CSCF and UE, inserts its SPD entries in its SPD and corresponding SAs into its SADB, and provides in an updated authorization challenge message (SM6) for the UE the SPD entries and corresponding SAs (See 3GPP TS33.203 §6.1.1).

With regards to claim 4, the 3GPP TS33.203 modified by the 3GPP TS22.228 as described above teaches the method as in claim 3, further characterized in that after receiving the updated authorization challenge message (SM6), the UE inserts (35) the SPD entries into its SPD and inserts the corresponding SAs into its SADB (See 3GPP TS33.203 §6.1.1).

With regards to claim 5, the 3GPP TS33.203 modified by the 3GPP TS22.228 as described above teaches the method as in claim 4, further characterized in that a register is kept for all services to allocate numbers used to derive keys for each service or part of a service. In 3GPP TS33.203 § B.1, it is taught that there exists a cipher key CK_{IM} for each IM, generated through IMS AKA, and that it is used to generate CK_{IM_in} and CK_{IM_out} . It is implicit that CK_{IM} is being stored somewhere, so keeping a register for the CK for each subscribed IM is necessary.

With regards to claim 6, the 3GPP TS33.203 modified by the 3GPP TS22.228 as described above teaches the method as in claim 5, further characterized in that the keys are an integrity key and a cipher key and are derived by applying a practically unidirectional mapping to an argument including the number allocated to the respective service or part of a service by the register being kept. In 3GPP TS33.203 § B.2, it is taught that there exists an integrity key IK_{IM} for each IM, generated through IMS AKA, and that it is used to generate IK_{IM_in} and IK_{IM_out} , and that they are derived using two unidirectional SAs based on the IK associated with the specific IM.

With regards to claim 7, the 3GPP TS33.203 teaches a method for registering a UE with an IMS so as to allow the UE to access, over a digital communication system, an IM service to which the UE is subscribed, the method including a step in which a P-CSCF of the IMS communicates to the UE an authorization challenge message (SM6) (See 3GPP TS33.203 §6.1.1). The 3GPP TS33.203 does not teach that SM6 is

characterized in that the authorization challenge message (SM6) includes at least one SPD entry and a corresponding SA derived by the P-CSCF from information provided to the P-CSCF indicating substantially all services to which the UE is subscribed along with either information that allows establishing SAs for each such service or information that could be used as keying material or other input for other security mechanisms specific to each service, and the UE inserts (35) the at least one SPD entry into its SPD and the corresponding SA into its SADB, so that for a predetermined time any traffic between the UE and the P-CSCF is secure for the substantially all services to which the UE is subscribed.

The 3GPP TS22.228 teaches a method for IMS that allows a UE to register with IMS for multimedia applications in which one of the connection negotiation messages contains a list of services to which the UE is subscribed. In particular, the 3GPP TS22.228 teaches that "it shall be possible for the capability negotiation to take place at invocation, acceptance, and during an IP multimedia session." In other words, the list of subscribed IM services can be communicated from the IMS to the UE at any point, specifically including the connection phase (invocation of the session). (3GPP TS22.228 § 7.3) Since SM6 is a part of the connection phase, it is implicit that SM6 would have to carry security information relative to the list of subscribed services from the P-CSCF to the UE.

It would have been obvious to one of ordinary skill in the art to modify the 3GPP TS33.203 using the 3GPP TS22.228 by incorporating the security information relative to the list of subscribed services in SM6, as taught by the 3GPP TS22.228. One would have been motivated to do so because SM6 is the only connection from the IMS to the UE in the IM-subscriber registration process. Thus, the SM6 message would be necessary for communicating security information relative to a list of capabilities during the connection phase. Inserting the transmitted security information (SAs and SPD entries) into the security databases (SADB, SPD) is an obvious step because the whole reason they exist is to store security information about the subscribed IMS services.

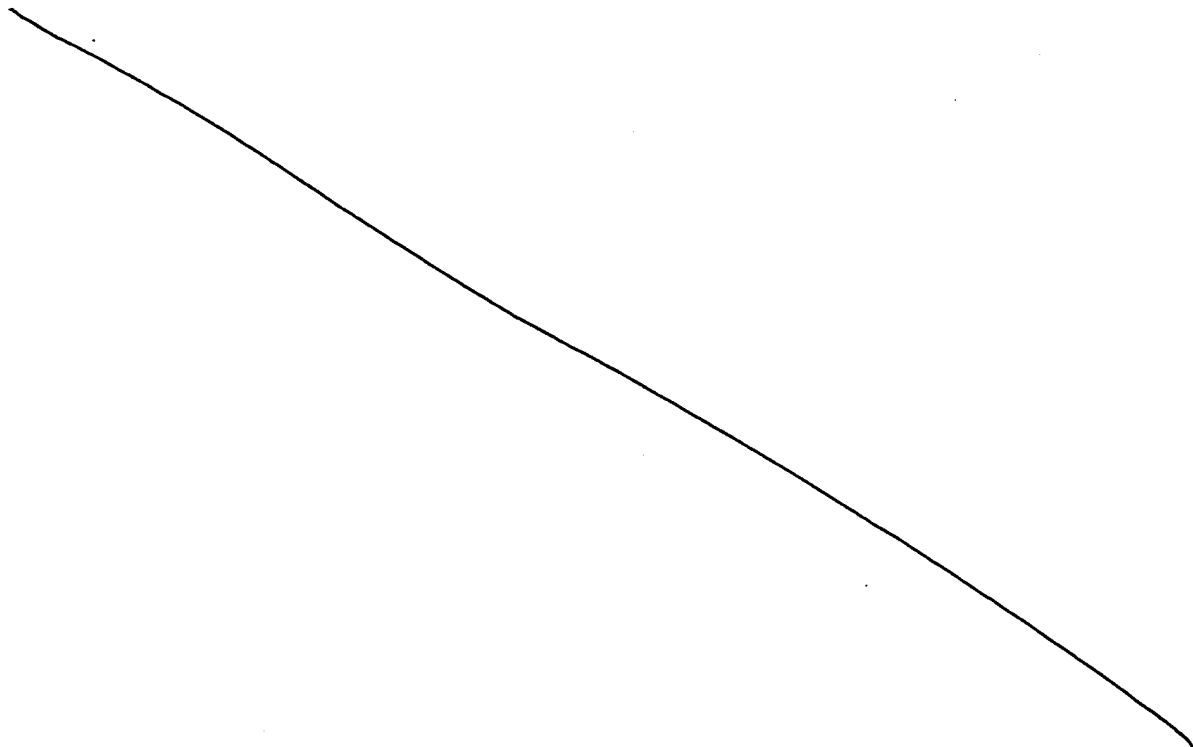
With regards to claim 8, the 3GPP TS33.203 modified by the 3GPP TS22.228 as described above teaches the method as in claim 7, further characterized in that a register is kept for all services to allocate numbers used to derive keys for each service or part of a service. In 3GPP TS33.203 § B.1, it is taught that there exists a cipher key CK_{IM} for each IM, generated through IMS AKA, and that it is used to generate CK_{IM_in} and CK_{IM_out} . It is implicit that CK_{IM} is being stored somewhere, so keeping a register for the CK for each subscribed IM is necessary.

With regards to claim 9, the 3GPP TS33.203 modified by the 3GPP TS22.228 as described above teaches the method as in claim 8, further characterized in that the keys are an integrity key and a cipher key and are derived by applying a practically unidirectional mapping to an argument including the number allocated to the respective

service or part of a service by the register being kept. In 3GPP TS33.203 § B.2, it is taught that there exists an integrity key IK_{IM} for each IM, generated through IMS AKA, and that it is used to generate IK_{IM_in} and IK_{IM_out} , and that they are derived using two unidirectional SAs based on the IK associated with the specific IM.

With regards to claim 10, the 3GPP TS33.203 modified by the 3GPP TS22.228 as described above teaches a UE, characterized in that it is operative according to the method of claim 7.

With regards to claim 11, the 3GPP TS33.203 modified by the 3GPP TS22.228 as described above teaches a digital communication system having an IMS, characterized in that the IMS is operative according to the method of claim 1.




Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Virgil Herring whose telephone number is (571) 272-8189. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gilberto Barron can be reached on (571) 272-3799. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


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